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AUTHOR Epstein, Joyce L.
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ABSTRACT

A model is described for a postdoctoral program based on the structuralist concept that opportunities must be made available by institutions and understood and experienced by participants. The elements of the model incorporate three aspects of an opportunity structure: opportunity for transition, which depends on the size of the program and the status of participants; opportunity for productivity, which depends on the extensiveness of on-going research, financial support and research services; and opportunity for association, which depends on professional exchanges conducted at and beyond the sponsoring institution. It is suggested that postdoctoral programs based on this model will result in the most immediate increase of minorities and women in leadership positions in educational research and development. The Fellowships in Educational Research Program of Johns Hopkins University is described as a working example of the model. Appendices include a list of standard and some seldom used avenues for recruitment to postdoctoral programs in sociology, especially for recruitment of minority researchers. (Author/SW)

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Center for Social Organization of Schools

Report No. 272

March 1979

AN OPPORTUNITY STRUCTURES MODEL FOR POSTDOCTORAL
PROGRAMS IN EDUCATIONAL RESEARCH

Joyce L. Epstein

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EDUCATION

STAFF

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Karl L. Alexander

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Hazel Thomas

Carol A. Weinreich

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The Johns Hopkins University

Baltimore, Maryland

Introductory Statement

The Center for Social Organization of Schools has two primary objectives: to develop a scientific knowledge of how schools affect their students, and to use this knowledge to develop better school practices and organization.

The Center works through four programs to achieve its objectives. The Policy Studies in School Desegregation program applies the basic theories of social organization of schools to study the internal conditions of desegregated schools, the feasibility of alternative desegregation policies, and the interrelation of school desegregation with other equity issues such as housing and job desegregation. The School Organization program is currently concerned with authority-control structures, task structures, reward systems, and peer group processes in schools. It has produced a large-scale study of the effects of open schools, has developed Student Team Learning Instructional processes for teaching various subjects in elementary and secondary schools, and has produced a computerized system for school-wide attendance monitoring. The School Process and Career Development program is studying transitions from high school to post secondary institutions and the role of schooling in the development of career plans and the actualization of labor market outcomes. The Studies in Delinquency and School Environments program is examining the interaction of school environments, school experiences, and individual characteristics in relation to in-school and later-life delinquency.

This report describes a model postdoctoral program designed to increase the participation and leadership roles of minorities and women in the field of educational research and development. The Fellowships in Educational Research program at the Center is presented as a specific example of the model.

Abstract

A model is described for a postdoctoral program based on the structuralist concept that opportunities must be made available by institutions and understood and experienced by participants. The elements of the model incorporate three aspects of an opportunity structure: Opportunity for transition, which depends on the size of the program and the status of participants; opportunity for productivity, which depends on the extensiveness of on-going research, financial support and research services; and opportunity for association, which depends on professional exchanges conducted at and beyond the sponsoring institution.

It is suggested that postdoctoral programs based on this model will result in the most immediate increase of minorities and women in leadership positions in educational research and development. The Fellowships in Educational Research Program is described as a working example of the model.

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An Opportunity Structures Model for Postdoctoral Programs in Educational Research

I. Identifying the Model

Although education and the social sciences attract women and members of minority groups more than any other academic discipline (National Center for Educational Statistics, 1977; Gottfredson, 1978), women and minorities continue to be severely underrepresented in the production and management of advanced social science research. There are many reasons for these conditions (Jackson and Pitterle, 1978), but only recently has there been a concerted effort to reduce the exclusionary practices that have contributed to the documented imbalances and to support programs for the professional advancement of women and minorities in educational research and development (Carey, McLaughlin, Patton and Tavakoliyazdi, 1977; National Institute of Education, 1977; Stivers and Leckie, 1977; Taylor, 1976; U.S. Office of Education, 1977).

There are several models currently proposed or in practice for programs to increase the participation of minorities and women in education research and development. Short weekend, summer, or mid-year workshops or institutes are common, as are more intensive programs that last from a few months to three years. These programs may be directed to persons at the research assistant, undergraduate, graduate or post-doctorate levels. The emphases of these diverse approaches include career awareness, para-professional or pre-professional training, course work, or participation in research. Although each of the approaches may be useful for certain purposes, the most immediate increase of minorities and women in leadership positions in research may be best accomplished by intensive, postdoctoral programs that emphasize the

conduct of quality research, rather than by more passive training programs.

The model described here for postdoctoral research programs is based on the structuralist concept that opportunities must be made available by institutions and understood and experienced by participants in order to eliminate or reduce the institutional barriers that have prevented full, professional participation by minorities and women in the education research and development system (Yinger, Ikeda, Laycock and Cuttler, 1977; Blackwell, Jackson, and Moore, 1977).¹ The elements of the model incorporate three aspects of an opportunity structure: Opportunity for transition, which depends on the size of the program and the status of participants; opportunity for productivity, which depends on the extensiveness of on-going research, financial support and research services; and opportunity for association, which depends on professional exchanges conducted at and beyond the sponsoring institution.

Opportunity for Transition

Transition is the resettlement from a former position into the sponsoring institution and into the broader professional community. Two factors seem especially important for successful transition--the size of the fellowship program and the status accorded the fellowship recipients.

Size. The program should be small enough to permit the easy integration of postdoctoral fellows with the permanent staff. Although a small program cannot accommodate a large number of postdoctoral fellows, a small, intensive program may maximize effectiveness for the participants.

¹The model has been instituted at the Johns Hopkins University Center for Social Organization of Schools and particular features are detailed in Part II of this report.

Moreover, impact on the field of education research may be maximized by stringent selection procedures that bring to the forefront a highly skilled cadre of researchers who will serve both as valued contributors to the field and as models for other minority and women students in social science (Coser, 1972). Many small, intensive programs at university or research settings may have a greater net effect on minority or women's representation in the field of education research and development than a few large workshops or other mass training programs. If the minority and women participants of large-scale, short, training workshops return to their original teaching positions without the opportunity to make use of their skills in research, their representation in active, advanced research is unaffected, at least in the short term.

A large group of newcomers tends to become a self-contained "cohort," isolated from the regular staff; members of a small group more quickly become interacting members of the regular staff. Thus, the small size of a special program can improve the transition of women and minority postdoctoral fellows into the sponsoring institution and into the field of research and development.

Status. Under this model, Fellowship Scientists are professionals not students. Were they not fellowship recipients, they would be assistant professors or research scientists at a university or institute. Remuneration should match the salary received at the Fellowship Scientist's current position. The usual transitional status of fellowship recipients--sometimes student, sometimes professor--is often an unproductive burden that benefits neither the recipient nor the institution. Under this model, the Fellowship Scientist is not punished

for aspiring to, and qualifying for a research leadership role. It is unjust to remove professional salary or status and to substitute another year of student life and relative poverty to the winners of a competition, while the losers retain their salary and status at their own universities. In order for a visiting researcher to make full use of the opportunities for research, support, and associations described below, the status of the Fellowship Scientist cannot be ambiguous.

Opportunity for Productivity

Productivity is the professional contributions completed within a given time. Two factors can directly affect the rate and quality of research that can be expected in a one to two year fellowship program-- the presence of a program of on-going research and financial support for the institution and program of research.

On-going research. A fellowship program to increase participation of minorities and women in educational research should be incorporated into a larger program of on-going research, preferably one with diverse areas for substantive and methodological inquiry. Blacks do not do research only on Blacks, Chicanos on Chicanos, women on women, and so on-- just as majority males do not do research only on white males. In fact, it has been suggested that such narrow focuses result in restricted audiences and limit the advancement of minorities and women in research (Blackwell, Jackson and Moore, 1977; Braddock, 1979). Although minorities and women may choose these areas and conduct important research in them, a fellowship program is likely to be especially effective for advancing women and minorities in the field of education research if there are opportunities to enter and conduct projects on a variety of topics.

These projects may be of the Fellow's design or may be selected from on-going projects at the sponsoring institution.¹ Although the Fellowship Scientist operates with autonomy, a program director or chairman of the sponsoring institution should request and assume some responsibility for the postdoctoral participant in the same way that the plans and progress of the permanent research staff are reviewed.

Support for research. The program requires full and continuing financial support for research for the sponsoring institution and the fellowship program. Visiting postdoctoral fellows will be most productive if they can immediately affiliate with research projects. If the purpose of the fellowship program is to increase the visibility of minority and women researchers in the field through the presentation of completed studies, then time cannot be devoted to proposal writing or seeking funds to conduct research. Although the writing of proposals is a valuable skill to develop, and research grants for the future may be important for the Fellowship Scientist, this should not be a primary nor conditional element of a postdoctoral program. The program must assure participants of financial support and resources--such as secretarial, research and computer assistance--to complete research for the defined period of their fellowship appointment.

¹This model differs in its flexibility of research possibilities from postdoctoral programs that require applicants to submit a full proposal for a single research project for one or more years of fellowship support. Although Fellowship Scientists propose a program of research, the research plan is formalized after the award is made. This design permits wider recruitment from women and minority junior faculty who cannot take the time from current teaching or research responsibilities to write a full proposal given the slim probability of receiving an award from a small, selective program. It also encourages recruitment of those who seek a redirection from their current field to research in the sociology of education, thus permitting a wider recruitment net to be cast.

The sponsoring institution will be most productive if it has in place its financial support for research and for the postdoctoral fellowships for at least three years. The security of the permanent staff, on-going research projects and continual reevaluation of directions for new research mean that the postdoctoral fellows will enter an environment that is ready to encourage their productivity. It takes several years to establish the reputation of a program in the field. It also takes several years to establish within the institution the recruitment techniques and mechanisms for program operation. The time needed to establish a postdoctoral program for minorities and women will be best spent by research institutions and university departments that have or can obtain stable financial support, facilities and services.

Opportunity for association

Association is the nature and extent of interactions within and outside of the sponsoring institution, and includes collegial relations and professional visibility.

Colleague relations. The program should encourage professional encounters with multiple reference groups at and beyond the sponsoring institution. Dyadic, small group and large group associations within the research setting provide the main social structure for the successful operation of a fellowship program. These associations are aided by a diverse, secure staff in support of the assimilation and participation of the postdoctoral fellows. A full-time, multi-cultural research staff, that includes more than token women and minorities, can create and enforce an environment of social and professional support through frequent exchanges and reviews of research plans, reports, presentations and ideas.

While some have spoken of "mentor" relationships (e.g., Jackson and Pitterle, 1978), this program emphasizes "multiple mentors" or contacts in addition to the one person responsible for encouraging the completion of publishable research selected by the fellowship scientist. Professional association within the research setting is necessary if the contacts that occur are to last beyond the fellowship tenure. One "mentor" is a precarious institutional tie; multiple contacts among colleagues can provide stable institutional ties, and diverse reactions for the visiting researchers. In turn, multiple contacts means that the Fellowship Scientist can react to the work of many members of the permanent staff or faculty and thereby increase the benefits to the sponsoring institution. The benefits from the visiting fellows can be immense, with the Fellowship Scientists increasing the total productivity of the institution, and as important, enriching and expanding the perspectives of the permanent staff.

Visibility. Opportunities for interaction with professionals beyond the boundaries of the sponsoring institution are important for long-term association of the Fellowship Scientists with the research community. The program emphasizes the preparation of research for publication and the presentation of research results at professional meetings. To the extent possible, the program encourages Fellowship Scientists to participate in the peer review process for journals of research in education, and in communication and consultation with researchers in other settings who are working in related substantive areas.

The representation of minorities and women in positions of leadership in education research and development may be helped, in part, by the visibility of their research conducted in prominent, desegregated research settings.

Association with colleagues and visibility in the profession at large can work in concert for the long-term goal of increasing the participation and leadership of women and minorities in the field. The "old boy" network will take on new meaning if quality products of research by minorities and women are entered into the system. As noted above, this kind of visibility requires financial support and professional encouragement from colleagues at the research site to make public the methodological skills and interpretative talents of the visiting Fellowship Scientists.

Summary. This model for postdoctoral programs is based on three opportunity structures that include six major elements: conditions of small size and equal status provide opportunities for transition; conditions of on-going research and financial support and services provide opportunity for productivity; conditions of colleague relations and visibility in other professional contexts provide opportunities for association. These features minimize the problems of relocation, isolation, and nonproliferation often associated with postdoctoral programs. With the emphasis on research, the norm is productivity. Active institutional support and a secure permanent staff permit the inclusion of new members; financial support and services permit visiting scientists to make useful contacts and publicly share their research results. Under this model there should be a short transition period, followed by an intensive period of full participation in research. Taken together, these features should accelerate the professional development of the Fellowship Scientist and, at the same time, benefit the sponsoring institution.

The elements of an opportunity structure model are, of course, interdependent. Opportunities for transition affect productivity; each of

these can affect and be affected by opportunities for association, and so on. These interdependencies are apparent in section II, which describes how this model was adapted at one institution.

II. Implementing the model

The process of implementing the elements of the opportunity structures model depends on the character and conditions of the sponsoring institution. Each of the elements of the model described above was incorporated into the Fellowships in Education Research Program at The Johns Hopkins University Center for Social Organization of Schools, supported by the Minorities and Women Program of the National Institute of Education. The implementation of the Hopkins program provides some examples of the procedures, problems, and possibilities suggested by the model.

Issues for transition: Recruitment

The opportunity for transition must be preceded by a program of recruitment. The lack of full recruitment has been cited to account for the fact that, especially at the professional and managerial levels, research in the sociology of education and related fields is conducted disproportionately by white male researchers. Minority and women researchers often have been restricted to lower-level tasks, in part, because of inadequate recruitment efforts, lack of training, experience, and recognition. It is estimated that representation by blacks in educational research and development is less than one-half that of their proportion in the population, and the proportion of women in professional positions is less than one-half that of men (NIE, 1977). The recruitment of minority researchers poses special problems. Wilkenson (1978) documents the underrepresentation of minorities in the behavioral sciences. Blacks received about 4.2% of the Ph.D.'s awarded in sociology

between 1973-1976; Spanish-surnamed received about 1% of the Ph.D.'s during that period; American Indians earned fewer than 0.5%. For these four years, about 127 members of minority groups received Ph.D.'s in sociology. These recent Ph.D.'s and the additional minority graduates each year form the major "pool" for recruits to postdoctoral programs in sociology. In all behavioral sciences the number of recent Ph.D.'s is about 355 Blacks, 135 Spanish-surnamed, and 36 American Indians. Many of these Ph.D.'s are in subdisciplines of sociology, psychology or anthropology unrelated to sociology of education, or are in positions they do not choose to leave for postdoctoral programs. Though the actual number of potential postdoctoral minority Ph.D. social scientists is small, there is, nevertheless, a population that could be attracted to a program based on the opportunity structures model.

In implementing the model at Hopkins, recruitment procedures have been designed to assure that information about the postdoctoral program reaches majority and minority Ph.D.'s. These procedures include (1) listing positions in professional employment bulletins and newsletters (including Black and Chicano newsletters); (2) transmission of program information and letters requesting nominations of candidates to department chairpersons in colleges and universities involved in recent graduate training of minority social scientists (ASA and APA Minority Fellowship Programs); (3) transmission of program information and letters requesting nominations of candidates to leading minority social scientists and other researchers of race relations and equity issues in education; (4) notice to newsletters of colleges that have large numbers of minority students and faculty; (5) requests for nomination of candidates from officials

of recent short-term programs for minority researchers (e.g., summer programs for minority predoctoral students sponsored by NIE and other agencies at other colleges and universities); (6) requests for nominations from minority researchers at the sponsoring institution and from their professional networks. Some potential avenues for increased recruitment efforts, especially for minority researchers, are listed in Appendix A.

In its short, two-year history, the Fellowships in Educational Research program at Hopkins has successfully recruited highly-talented, recent Ph.D.'s to the posts of Fellowship Scientists.¹ In the first year there were 37 women, minority, and majority male applicants for two postdoctoral positions; in the second year there were 55 applicants for three positions. The qualified candidates were rank ordered and on-site interviews and phone interviews were conducted with the top ten majority and minority men and women. Requests for postdoctoral fellows by the Center's research program directors were matched with the requests for program placement by the applicants. The result of the recruitment efforts is that annual postdoctoral awards were made to outstanding

¹ The Fellowships in Education program includes a predoctoral component that is based on the same opportunity structures model described for the postdoctoral level. After course work is completed, the predoctoral students are included in the research programs of the Center, receive advice from Center staff, and participate in professional activities as colleagues.

Predocctoral recruitment is limited to the efforts of the university, and the program is not discussed in this paper. It may be that as our fellowship program becomes better known, an indirect recruitment effect will occur to increase the number of qualified minority students who apply for predoctoral admission to The Johns Hopkins University and become potential recipients of support from the Center for Social Organization of Schools' fellowship program.

minority researchers. The Fellowship Scientists, appointed for one to two years, have elected mainly to work with (and were requested by) the Desegregation Studies program on empirical research of their own design that matches the interests of the program, or on collaborative efforts with permanent Center Research Scientists.

Fellowship recipients are paid a stipend which is supplemented with support for research conducted in connection with the Center programs. The combined support is equal to the salary that would be received at the Fellow's own university. This salary schedule maintains the professional status of the Fellowship Scientist. Without equal remuneration, recruitment of potential leaders in research would be impossible and the internal status differential with permanent Research Scientists would suppress the program's emphasis on colleague relationships between the Fellows and the Center staff.

Issues for productivity: On-going research and special program emphases.

The Center, part of a network of Educational Research and Development Laboratories and University Research Centers, supported by the National Institute of Education, has as its mission to conduct basic research and policy-related analyses on the structural forms, social arrangements and organizational characteristics of classrooms, schools and school systems that can be shown to have measurable consequences for student learning, attitudes, and later-life success in occupational and adult roles. The purpose is to produce better understanding of the interplay between the structure of schooling, informal social processes and important student outcomes, and to produce practical procedures and materials to successfully implement new organization forms for education that are derived from research results.

Four research programs deal with basic research and policy-related analyses: The School Organization Program, School Processes and Career Development Program, Policy Studies in Desegregation Program, and Delinquency and School Environments Program. Two major emphases should be noted. First, there is consistent attention to student outcomes in work that examines structural and organizational variations of schooling that may be more readily open to purposeful change rather than variables that are restricted to individual attitudes or informal social environments. Second, a significant portion of the Center's activities deal with such issues as how to create successful desegregated schools for majority and racial or ethnic minority students, how to establish educational environments that deal properly with the problems of alienated or delinquent youth, and how to provide educational opportunities that are accessible to all citizens. Each of these policy questions concerns major groups who do not presently receive equal educational opportunities in terms of access or attainments. Thus, the substantive nature of the on-going research is of interest to minority and women researchers, but the research is not narrowly defined in terms of minority and women issues.

Adapting the general model. The program incorporates the Center's strength by emphasizing the methodological advances in research on the sociology of education, concentrating on, but not limited to, the methods to deal with complex, non-experimental data. This adaptation--an emphasis added to the basic elements of the general opportunity structures model--will be different in each research or university setting where such a model may be instituted.

The emphasis on methodological issues and use is important for current educational research. Many of the research and evaluation opportunities in education involve nonexperimental data from students in schools with contrasting learning environments and instructional approaches. Representative groups of students are not randomly assigned to schools, yet the nonexperimental situations may provide the best chances for gaining important knowledge about school effects. Similarly, the publicly mandated assessments of the effectiveness of alternative educational programs--such as state accountability legislation and the evaluation provisions of federal education aid programs--often require studies of naturally occurring educational variations. There have been rapid and extensive recent developments in the scientific methodologies of non-experimental quantitative research to deal with the emerging research opportunities and demands. These developments include but are not limited to:

- estimating recursive and nonrecursive structural equation models;
- partitioning of explained variation into direct, indirect, unique and joint components;
- treating levels of analysis to deal with nonuniform between-group and within-group variances;
- specifying causal models and accounting for unmeasured variables;
- measuring proximate learning environments and a wide range of student outcomes;
- utilizing longitudinal data in multivariate studies to gain information on causality and the influence process.

Few of these topics are covered in detail in most graduate programs in educational research that focus on experimental design and analysis, and fewer still provide opportunity for hands-on experience in using these techniques.

Minority researchers may be one group of researchers most receptive to postdoctoral opportunities in the application of new methods to education sociology and social psychology. There is less than one percent black membership in the Sociology of Education Section of the American Sociological Association. Women researchers, who may have strong substantive training, may also be lacking in the quantitative skills and their application that have become part of today's social science research (Jackson and Pitterle, 1978).

Short courses of a few days duration are unlikely to provide otherwise well-trained social scientists with the necessary experiences to become proficient in the latest quantitative techniques in educational research; the CSOS one-to-two year fellowship program, with its emphasis on opportunities for research, is of sufficient duration to permit the study and application of new methods to important areas of educational research by the Fellowship Scientists. Graduate courses are available¹, but the intensive approach that emphasizes the conduct of empirical studies seems the best bet to increase the participation in research leadership positions by minorities and women.

¹ These include courses in Structural Equations, LISREL, Sociology of Education, Status Attainment, Data Simulations, Longitudinal Analyses, Multivariate Analyses, Methods of Data Collection, and others. Some postdoctoral fellows have elected to take or audit some of these courses.

The nature of research completed by Fellowship Scientists will depend on the topics and methodological approaches of each sponsoring institution. In addition to the CSOS emphasis on nonexperimental research, programs with permanent staff expertise in experimental design, theory development, ethnomethodological techniques, educational administration and management, early childhood education, and many others could improve efforts to increase participation and leadership of minorities and women in a range of areas of educational research and development.

Issues for association: Internal and external visibility

The Center's formidable history of hiring, promoting and providing career development opportunities for women and minorities was important background for the decision to institute and fully support a fellowship program. The small multi-cultural, interdisciplinary staff consists of leaders in several areas of sociology of education and research on desegregation and equity issues. These features are among the internal support conditions that make it relatively easy for the fellowship recipients to join the full-time staff of research scientists and to find a niche for conducting their own research or research suggested by on-going studies in the four Center research programs. In accordance with the opportunity structures model, the awareness of and experience with advanced methods for educational research is accomplished through the active participation by Fellowship Scientists with members of the permanent staff who are familiar with and use a variety of methods in their own research and in informal seminars conducted at the Center (see Appendix B). In turn, the Center researchers and programs benefit from the new perspectives and previous experiences of the visiting Fellowship Scientists. Opportunity for association is a two-way

process in which both the institution and the visiting researchers benefit.

In each of the two years of the CSOS program, the Fellowship Scientists participated in numerous professional activities to gain visibility in the Center and in the fields of sociology and social psychology. The postdoctoral fellows completed publishable research, attended formal and informal meetings with the Center staff, university professors and professionals at other universities or research locations. In the course of their work, the Fellowship Scientists planned or participated in research design, proposal writing, data collection, reorganization of secondary data sets, data analysis, reporting, revising, presentation of research results, and publication of reports and articles. They evaluated the work of others at the Center and received evaluation of their own work from Center colleagues. In other settings, they attended and presented papers at professional association meetings, reviewed research proposals for external agencies and served as referees of articles for journals. The postdoctoral fellowship award, with no obligation for teaching and administrative tasks, clearly assisted the researchers in accelerating their productivity and professional associations.

The "human element" of association cannot be adequately described and cannot be stressed enough. The efforts of recruitment and selection, the establishment of mutual respect, the enjoyment of new associations, the assistance to families in relocating, the establishment of communication channels for discussion of problems of transition or new attacks on research questions, and the development of procedures for new placements and/or continued communication at the close of the

Fellow's tenure are all dependent on the mutual goodwill, belief, time, and active participation in the program by the visiting Fellows and the regular staff. These personal efforts bring the opportunity structures and their components to life, and ultimately determine the quality of the program.

No mention has been made about the formal evaluation of this or other fellowship programs. The use of the opportunity structures model is concerned with the quality of conditions under which postdoctoral fellows operate in order to increase their productivity and thereby, their participation and prominence in the field of educational research. The problem remains to document the effectiveness of the program for the participants by studying how each recipient is different for having experienced the program; and at the same time, by studying how the sponsoring institution is different for having experienced the participants. Questions may concern the benefit of this model for postdoctoral work over another model (e.g., one that emphasizes course work), or the benefit to participants in this model compared to professionals who have not participated in any postdoctoral program. Such assessments may focus on comparative productivity during the year of and for years after fellowship tenure with persons not accepted, but considered, for the postdoctoral award, persons of equal stature awarded postdoctoral fellowships by differently modeled programs, citation counts of these comparative groups, subjective evaluations of the participants in various programs or non-participants on a variety of topics about their participation in, contacts within and impact on the field of sociology of education or their students, and so on. It will be important, in

the long term, to evaluate the impact of such programs on the sponsoring institution and on the field of educational research and development in terms of the demographics of prominent researchers, and on the topics, analyses and interpretation of research conducted. Such evaluations will not be easy, and will require methodological mixtures and sophisticated design strategies to be of any use in determining the effectiveness of postdoctoral programs.

Summary: The application of the model.

The type of postdoctoral program emphasizing research opportunities adopted by CSOS is generalizable to other university or research settings. The program is designed to intervene constructively at a time early in a researcher's career to provide opportunities for completion of research, publication, presentation of results, and for personal interaction with the research community. The one-to-two-year period of intensive research participation and productivity may assist researchers toward leadership in the field of educational research and development by reducing constraints imposed by teaching and other obligations. At the same time, the sponsoring institution stands to benefit from the knowledge, perspectives, interpretations, and evaluations of the visiting postdoctoral fellowship scientists.

The definition of the opportunity structures model and the discussion of issues relating to the implementation of the model should make it clear that it is not enough to award fellowships. The opportunities structures model has a number of unique features: it requires research opportunities for conducting quality, empirical educational research; it involves a one-to-two-year program of experiences; it emphasizes

research colleague roles for participants, supplemented by instructional offerings; it is intended to increase research leadership by minorities and women.

Strong institutional support is a requirement for these kinds of activities. This includes support from all levels of the permanent staff at the sponsoring institution--from the chairperson or director to the secretarial and research support staff. If the aim is to promote minorities and women to positions of leadership within the research community, then the same kinds of opportunities, associations, visibility and support offered to the permanent, majority, full-time staff must be made available to postdoctoral participants. Only in this way can contacts made within the field of education research and development endure beyond the period of participation in the postdoctoral program.

One small program cannot measurably revise the underrepresentation of minorities and women in the social sciences. However, a "multiplier effect" of this and similar programs is anticipated over the years as the participants influence other advanced students through the example of their own research accomplishments. Changes in level, rate and kind of participation of women and minorities can occur if many small programs at university and research settings incorporate a model of active participation for professionals in basic and applied education research.

Appendix A

Recruitment

The list below includes some standard and some seldom used avenues for recruitment to postdoctoral programs in sociology, especially for recruitment of minority researchers. The list is incomplete, and not all entries have yet been explored, so no evaluation can be made about the effectiveness (or even the continued existence) of the various sources for recruitment. Furthermore, successful recruitment also depends on the timing of advertisements, number, level, and support of positions. A program with few positions may advertise more selectively than a large program seeking 20-40 participants.

Standard avenues for recruitment for education research positions:

American Educational Research Association, Educational Researcher

American Psychological Association Bulletin

American Sociological Association Employment Bulletin

American Sociological Association Footnotes (notices of funding opportunities)

Chronicle of Higher Education

Letters to department Chairpersons (including Departments of Sociology, social psychology, education, Afro-american studies) and to departments currently employing minority faculty

Letters requesting nominations or notices in publications should be sent well in advance of the deadline for applications for postdoctoral fellowships. These programs compete with or must work in concert with the academic calendar. Therefore, applications for awards for the academic year must be taken the previous January or February.

Recruiting Black Postdoctoral Candidates

See Calvert (1972) and ETS (1975) for a complete list of predominantly black universities with social science faculties and pre-dominately white universities with large proportions of minority faculty or graduate students.

Selected agencies and special interest groups:

American Sociological Association Committee on Status of Racial and Ethnic Minorities, and Minority Fellowship (Graduate) Program, 1722 N Street, N.W., Washington, D.C. 20036

American Psychological Association, Minority Fellowship (Graduate) Program, 1200 Seventeenth Street, Washington, D.C. 20036

American Education Research Association Special Interest Group Research Focus on Black Education, Dr. John F. Heflin, Chair 1978-79, School of Education, Portland State University, P.O. Box 751, Portland, OR 97207

Association of Black Sociologists, Dr. Wilbur Watson, President 1978-79, Department of Sociology, Morgan State University, Hillen Road and Cold Spring Lane, Baltimore, MD 21239

ETS, Minority Predoctoral Research Internships, Princeton, NJ 08540

Ford Foundation Office of Special Projects, 320 E 43St. New York, NY 10017

Higher Education Resource Services, Dr. Dorothy J. Jackson, University of Pennsylvania, 3601 Locust Walk/C8, Philadelphia, PA 19104

Howard University School of Education, Educational and School Psychology Internships Program, 2400 6th Street, Washington, D.C. 20059

Institute for Services to Education, 2001 S Street, N.W., Washington, D.C. 20009

Massachusetts Institute of Technology Urban Community Fellowship Program, Cambridge, Mass. 03139

National Institute of Mental Health, Center for Minority Groups Mental Health Programs for Graduate Training, 5600 Fischer's Lane, Rockville, MD 20852

National Technical Association, 3310 Georgia Ave., N.W., Washington, D.C. 20010

National Urban League, 500 East 62nd Street, New York, NY 10022

The Research Foundation, City University of New York, 32 West 42nd Street, New York, NY 10036

Southern Education Foundation, 811 Cypress Street, N.E., Atlanta, Georgia 30308

Newsletters or journals

Atlanta University Bulletin, Atlanta University, Atlanta, GA 30314

Black Collegian, 3217 Melpomene Street, New Orleans, LA 70125

Black Scholar, P.O. Box 908, Sausalito, CA 94965

Black Students Association, 112 Low Library, Columbia University, NY, NY 10027

Digest/Southern University, Baton Rouge, LA 70813

Educational Resources Center, Hampton Institute, Hampton, VA 23668

Harvard Newsletter, Harvard University, Cambridge, Mass. 02138

Howard Journal of Negro Affairs, Winthrop E-41, Harvard University, Cambridge, Mass. 02138

Herald, Texas Southern University, Houston, Texas 77004

Howard University Magazine, Howard University, Washington, D.C. 20001

Integrated Education, Meyer Weinberg (Editor) Center for Equal Education, 7 Winston Ct., Amherst, Mass. 01002

Phylon, Atlanta University, Atlanta, GA 30314

Urban Affairs Newsletter, Am. Assn. of State Coll. & Univ., 1 Dupont Circle, Washington, D.C. 20036

Recruitment of Chicanos/Spanish Surname

American Psychological Association, Chicano interest group
1200 17th Street, Washington, D.C. 20036

American Sociological Association, Junta de Sociologos Chicanos
Alfredo Mirande, Department of Sociology, Univ. of Cal., Riverside,
CA 92521

ASPIRA of America, 296 Fifth Avenue, New York, NY 10001

El Ojo, Montal Associates, 1700 K Street, N.W., Washington, D.C.
20006

La Luz Magazine, 8000 E. Gerard, Denver, Colorado 80204

Mexican American Research Center, 545 N.E. 47th Avenue, Portland,
Oregon 97213

The Net (Newsletter), 5080 Institute for Social Research,
University of Michigan, Ann Arbor, Michigan 48109

Natural Council of La Raza, 1725 "Eye" Street, N.W., Suite 210,
Washington, D.C. 20006

Spanish-Speaking Mental Health Research Center, University of
California, Los Angeles 90024

National Image, Inc. (VOS) Vacancy Outreach Service, P.O. Box
4087, Arlington, VA 22204

Other Pre- and Postdoctoral Programs

A number of programs supported by the National Institute of Education Minorities and Women Program are natural resources for recruitment. One program could assist another if it receives more applications from qualified persons than it can accommodate; predoctoral students may become postdoctoral candidates; short-term institutes may whet the appetite of talented postdoctoral candidates for more intensive programs, and so on. The following is a list of programs that form a natural recruitment network after each has completed their own best recruitment procedures to identify top candidates.

University of Alabama, Institute for Higher Education Research
& Services, Thomas Diener and Otis Holloway Owens, P.O.
Box 6293, University of Alabama 35486

American Sociological Association, Research Skills Development
Institute, Doris Wilkinson, 1722 N. Street, N.W.,
Washington, D.C. 20208

Asian American Bilingual Center, Berkeley Unified School District,
Sau-Lim Tsang, 2168 Shattuck Avenue, 3rd Floor, Berkeley,
CA 94704

ASPIRA, Research Task Force on Education, Mario A. Anglada,
296 Fifth Avenue, New York, NY 10022

CEMREL, Inc., Experimental Project for Increasing Participation of
Women and Minorities in Education R & D, Sharon Koenigs
3120 50th Street, St. Louis, Missouri 63139

Colegio Cesar Chavez, Project Growth, Salvador Ramirez, 1000 Main
Street, Mt. Angel, Oregon 97362

Columbia University Teachers' College, The Mentor/Fellow Model,
Edmund Gordon, Institute for Urban and Minority Education,
525 W. Roth Street, New York, NY 10027

Eastern Michigan University, Bilingual Education Research, Raymond
V. Padilla, 106 Ford Hall, Ypsilanti, Michigan 48197

Hampton Institute, Educational Resources Center, Ronald Braithwaite,
Hampton Institute, Hampton, VA 23668

Higher Education Research System (HERS) Cynthia Secor, 4020 Chestnut
Street, Philadelphia, PA 19174

Howard University, Institute for Urban Affairs and Research,
Laurence Gary, 2935 Upton St., N.W., Washington, D.C. 20001

Indian Education Training, Inc., Myron E. Jones, 1110 Penn, N.E.,
Albuquerque, New Mexico 87110

The Johns Hopkins University Center for Social Organization of
Schools Fellowships in Educational Research, Joyce L.
Epstein, 3505 N. Charles Street, Baltimore, Maryland 21218

La Casa de Puerto Rico, Research and Training Project, Dalila Soto,
96 Wadsworth Street, Hartford, Connecticut 06100

University of Michigan, School of Education, Betty Mae Morrison,
Wilbert McKeachie, 4218 School of Education Bldg., Ann Arbor,
Michigan 48109

Natural Academy of Education, Research Management Workshops, John
May, 11 Dupont Circle #130, Washington, D.C. 20036

Natural Council of La Raza, Advanced Research Seminars, Mike Cortez,
1725 "Eye" Street, N. W., Suite 210, Washington, D.C. 20006

New Mexico State University, Equal Participation in Educational
Research, Lily Bergsma, Educational Research Center, Box 3R,
Las Cruces, New Mexico 88003

Northwest Regional Educational Laboratory, Increasing Participation
of Women and Minorities in Education R & D, Carolyn Hunter,
710 S.W. Second Avenue, Portland, Oregon 97204

Northwest University, Postdoctoral Project, Arlene Kaplin Daniels,
Department of Sociology, Clark Street, Evanston, Illinois
60201

University of Pittsburgh, Learning Research and Development Center,
Project Impact, Lloyd Bond and Bill Bickel, 3938 O'Hara
Street, Pittsburgh, PA 15260

Radcliffe College, Bunting Institute Postdoctoral Educational
Studies Project, Marion Kilson, The Mary Ingraham Bunting
Institute of Radcliffe College, 3 James Street, Cambridge,
Mass. 02138

Research for Better Schools, Experimental Project, Mary V. Brown,
1700 Market Street, Suite 1700, Philadelphia, PA 17103

San Diego State University, Advanced and Specialized Study in
Educational Research Techniques, Ricarido Cornejo and
Ana Maria Rodiquiz, 5300 Campanile Drive, San Diego,
CA 92182

University of Southern California, Doctoral Fellowship Project in
National Education Policy and Legislation, Silas H. Abrego,
John A. Carpenter, USC, School of Education, Waite
Phillips Hall, 300 University Park, Los Angeles, CA 90007

Southwest Educational Development Laboratory, Individualized
Internship Program, Norvell Northcutt, 211 East Seventh
Street, Austin, Texas 78701

TEAM Associates Inc., Merion E. Solomon, 1522 K Street, N.W.,
Suite 900, Washington, D.C. 20005

University of Texas, Pre and Postdoctoral Project for Minorities
and Women in Research, Teresa H. Escobedo, Dept. of
Curriculum and Instruction, EDB 406, Austin, Texas 78712

Appendix B

Weekly Center Seminars

Weekly seminars are conducted in which Center researchers present the results, plans or problems of their current work. These are attended by all Center staff, including the postdoctoral participants. A wide range of substantive and methodological issues have been discussed since the Fellowship program started in September of 1977. These included:

Use of time in school, N. Karweit
 Models for the study of classroom dynamics, J. Fennessey
 Team-based learning and reward contingencies, R. Slavin
 Problems with longitudinal data collection, M. Cook
 Construction of segregation indexes, J. McPartland
 Segregation indexes and places of work, H. Becker
 Boston school desegregation study, C. Thomas
 Peer group formation research, J. Epstein
 Standardized vs. unstandardized regression equations, J. M. Richards
 Educational Plans and college attendance, K. Alexander
 Ecological models for the study of high school crime, G. Gottfredson
 Study of black and white enrollment patterns in college, G. Thomas
 Office of Education and NIE dissemination projects, J. Hollifield
 Age trends in aspirations, job, and aspiration-job match, L. Gottfredson
 Physical, psychological, and sociocultural factors in learning disabilities, M. Leavey
 Analyzing school effects with regression slopes as outputs, D. Daiger and J. Fennessey
 Plans for the study of racial attitudes, R. Scott
 Evaluation of the MITE program (Minority Introduction to Engineering), J. M. Richards
 Longitudinal analyses of family and school environments, J. Epstein
 Study of social class and race on racial attitudes effect, C. Thomas
 Sequencing of educational and life experiences, N. Karweit
 Desegregation effects and potentials, J. McPartland
 Effective strategies for improving race relations, R. Slavin
 Self-esteem of Black children, B. Hare
 New directions for studies of personality, J. Holland
 Differences in race and sex occupational trends, L. Gottfredson
 Effects of high school desegregation on choice of desegregated college, J. Braddock
 NLS data analyses, G. Thomas

A series of methods seminars were conducted at the Center by James McPartland. These included: Partitioning variance into unique and joint components; recursive and nonrecursive models; uses of path analysis.

Special University seminars by James Coleman (Authority Structures), Robert Rosenthal (Expectation Theory), Dag Sorbom (LISREL Techniques) and others were also attended by the Center Staff and Fellowship Scientists.

In each seminar, the researcher's work is open for audience reactions and suggestions.

References

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faculty tenure. Western Journal of Black Studies
(forthcoming).

Calvert, R., Jr.

- 1972 Equal Employment Opportunity for Minority Group College
Graduates: Locating, Recruiting, Employing. Garrett
Park, MD: Garrett Press.

Carey, P., McLaughlin, S., Patton, M., Tavakolizadi, M.

- 1977 Selection without discrimination: An analysis of the ASA
minority fellowship program. Sociology of Education 42:
144-150.

Center for Social Organization of Schools

- 1977 Advanced Postdoctoral and Predoctoral Internships for
Nonexperimental Quantitative Research in Education.
(Proposal submitted to NIE Women and Minorities Program
1977 Competition). The Johns Hopkins University.

Coser, R. L.

- 1972 A rejoinder to sociological apartheid. The American
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Educational Testing Service

- 1975 Graduate and Professional School Opportunity for Minority
Students, 1975-77. Princeton: ETS.

Gottfredson, L.

- 1978 An analytical description of employment according to race, sex, prestige, and Holland type of work. *Journal of Vocational Behavior* 13:210-221.

Jackson, D. J. and Pitterle, K.

- 1978 Educational research internship for women and minority junior faculty. A feasibility study. Higher Education Resources Services, University of Pennsylvania.

National Center for Educational Statistics

- 1977 Digest of Educational Statistics. Washington, D.C.: US Government Printing Office.

National Institute of Education

- 1977 Experimental project grants for increasing participation of women and minorities in education R & D. Dissemination and Resource Group, RFP.

Stivers, P. and Leckie, D. (Eds.)

- 1977 Planning Conference to Increase the Participation of Women and Minorities in Educational Research and Development. Washington, D.C.: National Institute of Education/AERA.

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- 1978 A profile: Minorities in sociology and other behavioral sciences. Footnotes (American Sociological Association) 6:6-7.

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